

Industrial Fire World
Opportunistic Pathogens
Public soap dispensers often contaminated

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Every time you use soap from an open refillable bulk soap reservoir dispenser, you could be putting hundreds of millions of fecal bacteria on your hands, which is actually more than is in the toilet after you flush it, according to Dr. Charles P. Gerba, microbiologist from the University of Arizona in Tucson.

The studies conducted by the University of Arizona, under the direction of Dr. Gerba, showed that approximately 23 to 25 percent of samples taken from open refillable bulk soap reservoir dispensers were contaminated with unsafe levels of bacteria. Coliforms, illness causing fecal-based organisms, were found in 16 to 22 percent of the samples.

The amount of contamination was higher in samples collected from health and fitness facilities. There, nearly 33 to 36 percent of random samples taken from open refillable soap dispensers were contaminated with unsafe levels of bacteria. Coliforms, illness causing fecal-based organisms, were found in 50 to 55 percent of the contaminated samples.

Dr. Gerba suspected that the number of contaminants were higher due to the warmer environment in showers and sinks located in locker room areas.

In contrast, no bacterial contamination was found in soap dispensed from sealed systems.

The findings from these studies were presented at a recent meeting of the American Society for Microbiology (ASM) in Toronto, Canada and will be presented in June at the National Environmental Health Association's Annual Conference. The studies, which were funded in part by GOJO Industries of Akron, OH, concluded that the open refillable bulk soap reservoir dispensers are a breeding ground for germs and can result in a public health risk.

Open refillable bulk soap reservoir dispensers utilize a refillable container from which product is dispensed. It is refilled by pouring soap into the container on an "as needed" basis.

"When we first learned about contamination issues regarding open refillable bulk soap reservoir dispensers, we wanted to collect data to determine if it was true," said Joe Kanfer, chairman and chief executive officer of GOJO Industries. "The study by Dr. Gerba confirmed that contamination is present."

According to Dr. Gerba, the bacteria that were found in overwhelming numbers were opportunistic pathogens. Opportunistic pathogens are capable of causing serious infections in young people and people who are immunocompromised. He explained that these infections can range from eye, skin or respiratory infections.

Although young people and those who are immunocompromised are at greater risk of infection, Dr. Gerba says everyone is susceptible, especially if you have abrasions or open cuts or wounds. He adds that by washing your hands with contaminated soap, there is also the potential of spreading the germs each time you touch another surface.

While opportunistic pathogens predominated, Dr. Gerba said you should not rule out the existence of frank pathogens growing in these open refillable soap dispensers. Frank pathogens are unmistakable viruses, microorganisms or other substances that can cause disease in everyone, including healthy individuals.

Dr. Gerba explained this study focused on the amount of bacteria in the systems. He noted that opportunistic pathogens that were predominate included Klebsiella, Enterobacter, and Serratia.

“We don’t know all the different types of bacteria that can grow in the dispenser,” said Dr. Gerba. “There could be frank pathogens that make everybody ill. So, my thinking is why take a chance?” He urged further testing to determine and identify disease-causing frank pathogens that might be housed at lower levels in these open refillable dispensers.

Meanwhile, does the type of open refillable bulk soap reservoir dispensers make a difference with regard to contamination? Dr. Gerba said any open refillable dispenser whether plastic or stainless steel could be subject to contamination. He cautioned that stainless steel dispensers may lend a false sense of security.

“Stainless steel will not control microbial growth,” responded Dr. Gerba. “They are very easy surfaces to clean. But, they won’t control microbial growth.”

Although manufacturers of these systems offer cleaning instructions and some offer products which claim to clean and sanitize these types of systems, Dr. Gerba said he is unaware of any established protocol for cleaning and effective sanitizing of open refillable bulk soap reservoir dispensers.

With regard to cleaning solutions that also claim to sanitize, Dr. Gerba suggested that you should ask to see the data of how well it works and how often you really need to clean the system to maintain it in a sanitary manner.

According to Dr. Gerba, the only safe solution to the risks of using open refillable bulk soap reservoir dispensers is to use sealed systems. Sealed systems utilize refill cartridges that are sealed during the manufacturing process. These high-capacity refills are used once and then discarded when empty.

The studies showed that no pathogens were found in soap collected from sealed systems.

Dr. Gerba explained, “A sealed system is sealed at the factory during manufacturing where the bulk system is actually refilled at the facility. It (bulk soap) may actually be diluted with water and may be contaminated from the water and people putting their fingers in the soap. That doesn’t happen with a sealed system.”

After analyzing the data from the study, Dr. Gerba concluded “I think the industry that supplies bulk soap should promote the use of sealed containers and not reusable fillable containers.”

Dr. Gerba is a professor of environmental microbiology in the departments of Microbiology and Immunology and Soil, Water, and Environmental Science at the University of Arizona in Tucson. For more information, visit www.gojo.com.

http://www.fireworld.com/ifw_articles/soap_dispensers.php